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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,821	12/08/2005	Osamu Kohgo	1034232-000003	7415
21839 7590 09/18/2008 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER HUHN, RICHARD A	
			ART UNIT 4131	PAPER NUMBER
			NOTIFICATION DATE 09/18/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No. 10/559,821	Applicant(s) KOHGO ET AL.	
	Examiner RICHARD A. HUHN	Art Unit 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 6, 11, 15 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08 Dec 2005, 12 Dec 2006, 23 June 2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Crosslinked methacrylic resin containing polycyclic aliphatic units for optical materials.

Claim Objections

2. Claims 6, 11, 15, 19 are objected to because of the following informalities: in these claims, the word "claim" is misspelled as "clam." Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

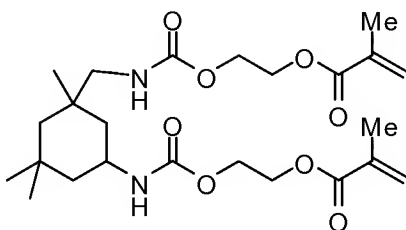
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 3,873,640. US '640 discloses a resin monomer composition comprising:

- a. monomers derived from isophorone diisocyanate with 2-hydroxyethyl methacrylate, as in instant structure (1). (See column 3, lines 50 to 56; and column 5, lines 16 to 43. Column 5, line 26 discloses isophorone diisocyanate as the organo-isocyanate, and Column 3, lines 54-55 disclose 2-hydroxyethyl

methacrylate as the "cap" for the isocyanate). This particular embodiment is



shown here:

- b. MMA and/or its syrup. (See column 3, line 40 to column 4, line 3. Column 3, line 45 discloses methyl methacrylate. Column 3, line 49 discloses partially polymerized syrups).
- c. a radical initiator (column 3, line 67 discloses benzoyl peroxide).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-20 are rejected under 35 U.S.C. 103(a) as obvious over US Patent No. 3,873,640 as applied to claim 1 above, and further in view of US Patent No. 5,183,870.

6. As to claims 3 and 8: as noted above, the primary reference US '640 teaches all of the limitations of claims 1 and 2. US '640 fails to disclose structures (2), (4), and (5) for use in optical materials. The secondary reference US Patent No. 5,183,870 discloses isophorone-derived diacrylate structures (1) and structures (2), (4), and (5) (see column 10, line 59 to column 11, line 3: compounds abbreviated as UDM1, TCDM,

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IBA, and CHM, respectively), and copolymerization with MMA (see column 8, lines 32 to column 9 line 52: line 45 discloses methyl methacrylate). US '870 teaches that acrylates such as (2), (4), and (5) improve physical properties such as water absorption, impact resistance, and surface accuracy of optical materials (see column 6, line 24 to column 8, line 31). In view of US '640 and US '870, a person of ordinary skill in the art would know that compounds (2), (4), and (5) may be copolymerized with monomer syrups for the production of optical materials. It would have been obvious to include the compounds of structures (2) (4) or (5) in the composition of US '640 because the resultant polymer would have improved physical properties such as water absorption, impact resistance and surface accuracy.

7. As to claims 4, 9, 13, and 17: the above-cited references disclose the polymerization of monomer compositions (e.g., see US '870, column 12, example 1).

8. As to claims 5, 10, 14, and 18: the above-cited references disclose that the resin obtained by polymerization may be molded (e.g., see US '870, column 12, example 1).

9. As to claims 6, 11, 15, and 19: the above-cited references disclose that the molded article is transparent (e.g., see US '870, column 14, Table 1).

10. As to claims 7, 12, 16, and 20: the above-cited references disclose the transparent articles for use as optical materials (e.g., see US '870, column 4, line 66).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- d. US Patent No. 4,097,439 discloses diisocyanate-derived diacrylate monomers and monomer syrups for use in preparing coatings.
- e. US Patent No. 4,957,990 discloses structure (I) and structure (4) and isophorone-derived diacrylates for several molded optical materials.
- f. US Patent No. 5,200,107 discloses an MMA syrup for use in preparing optical materials.
- g. US Patent No. 5,234,792 discloses isophorone-derived acrylic monomers and polycyclic aliphatic acrylic monomers for use in preparing optical materials.
- h. US Patent No. 5,574,100 discloses structures (5) and (6) for use in preparing optical memory disks.
- i. US Patent No. 5,770,655 discloses cyclic acrylic monomers for use in preparing optical materials.
- j. US Patent No. 7,307,107 discloses isophorone-derived acrylic monomers for use in preparing optical materials.
- k. Japanese Patent Application No. 2005-41747 discloses isophorone-derived acrylic monomers and acrylic syrups for use in preparing optical materials.
- l. Japanese Patent Application No. 63-85030 discloses structure (3) and isophorone-derived diacrylates for optical fibers.
- m. Japanese Patent Application No. 1-110316 discloses structure (I) and structure (4) and isophorone-derived diacrylates for optical materials.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD A. HUHN whose telephone number is (571) 270-7345. The examiner can normally be reached on Monday to Friday, 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner
Art Unit 4131